

**Remarks/Arguments:**

Claims 1, 3-11, 13-21 and 23-25 are pending in the subject patent application. Claims 1, 16, 19 and 21 are amended by this amendment. Basis for the amendments to the claims may be found in paragraphs [0064-0070].

Applicants acknowledge with appreciation the courtesy shown to their representative by Examiner Vo during the telephone interview of May 2, 2008. During the course of the interview, Applicants' representative discussed the differences between independent claim 1, Lindenmeier et al. (U.S. 6,574,460) (hereinafter Lindenmeier) and Meredith et al. (U.S. 6,052,605) (hereinafter Meredith). In particular, Applicants' representative pointed out that neither Lindenmeier nor Meredith disclose a plurality of antennas where each antenna can receive an RF signal from a different direction and where signals from the plurality of antennas can be combined to receive the RF signal from a preferred direction. No agreement was reached.

Claims 1, 14, 16, 17 and 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tong et al. (U.S. 6,337,658) (hereinafter "Tong") in view of Lindenmeier or Meredith. Applicants respectfully request reconsideration. In particular, neither Tong, Lindenmeier, Meredith nor their combination disclose or suggest:

...each of the plurality of antennas configured to receive a radio frequency (RF) signal from a respectively different direction...

...receiving the RF signal from the plurality of antennas, to receive the RF signal from multiple directions...

...sending a direction control signal to the plurality of antennas such that signals from at least two of the plurality of antennas are combined to receive the RF signal from the preferred direction...

as required by claim 1. While not identical to claim 1, claims 16 and 21 include similar limitations.

Tong concerns a transmit antenna alignment peak search method and apparatus. As described in the background of Tong, "the dish antenna at the ground terminal can be aligned with the satellite by monitoring received signal strengths and frequency spectra...." Tong discloses using only a single dish antenna and a single characteristic to align the antenna. In the examples given, Tong uses "an alignment accuracy indication (which is assumed to be a SNR measurement (signal-to-noise ratio) i.e.  $E_b/N_0$  for this example)...." (See Col.4, lines 50-

52). The method and apparatus disclosed by Tong determine an alignment direction based on the maximum value of  $E_b/N_o$ . (See Col. 6, lines 49-54). As acknowledged by the Examiner, Tong does not disclose or suggest, "receiving the RF signals from the plurality of antennas, to receive the RF signal from multiple directions," as required by claims 1, 16 and 21. Accordingly, Tong cannot disclose or suggest sending a direction control signal such that signals from at least two of the plurality of antennas are combined to receive the RF signal from the preferred direction, as required by claims 1, 16 and 21. Thus, Tong does not include all of the features of claims 1, 16 and 21.

Lindenmeier discloses, in Fig. 1, a radiotelephone system including group antenna system 1 and mobile radiotelephone 2. Group antenna system 1 includes a number of antenna elements 5 that are combined into a directional diagram by phase and/or amplitude adjustment. (See Col. 2, lines 14-27). A main direction of reception is determined by a control and search process with a receiver level measuring device 11, by tracking among directional diagrams for different directions. (See Col. 2, lines 45-59 and Figs. 2 and 5).

Lindenmeier, however, does not disclose or suggest that each of the antennas is configured to receive an RF signal from a different direction such that the RF signal is received from multiple directions, as required by claims 1, 16 and 21. Lindenmeier, instead, tracks a main direction of reception by scanning among directional diagrams for different directions. (See Fig. 5). Each antenna element 5 of Lindenmeier (for any directional diagram) is, thus, directed to receive an RF signal from a same direction. In Fig. 4b, Lindenmeier shows controllable switching elements 4 that are closed to produce a focused radiation pattern. Lindenmeier, however, only discloses opening a switching element 4 when reception interference is detected. (See Col. 3, lines 21-38). In addition, Lindenmeier does not suggest that signals from at least two of the plurality of antennas are combined to receive an RF signal from a preferred direction, as required by claims 1, 16 and 21. Lindenmeier teaches only that a main reception direction is determined from the directional diagrams. Thus, Lindenmeier do not include all of the features of claims 1, 16 and 21.

Meredith discloses, in Fig. 1, a mobile radio system base site 10 including antennas 202 and scanning and targeting system 100. Scanning and targeting system 100 connects receive sections of radio channel units 203 with any two antennas 202 which have a strongest received RF signal strength. (See Col. 4, lines 4-19). Antennas 202 represent 12 different narrowband

antennas (i.e. directional antennas) or 12 different beams of a phased array system (i.e. for fixed directions). (See Col. 4, lines 34-50). According to Meredith, a signal strength from each of the 12 antennas/phased array beams is sequentially determined in order to select two antenna/phased array beams with a strongest reception. A diversity amplifier of radio channel unit 203 then selects between one of the two fixed antennas/phased array beams. (See Col. 6, line 38-Col. 7, line 12).

Meredith, however, does not teach that each of the antennas is configured to receive an RF signal from a different direction and that signals from at least two of the plurality of antennas are combined to receive an RF signal from a preferred direction, as required by claims 1, 16 and 21. Meredith, instead, (a) selects one of the directional antennas or (b) one configuration of the phased array antenna with a best signal strength. With respect to the plurality of directional antennas, Meredith does not teach that the plurality of directional antennas can be combined for a preferred reception direction. Meredith, instead, selects one of the directional antennas with a best signal strength. With respect to the phased array beams, each of the phased array beams are provided at fixed directions and, thus, are not directional. In addition, Meredith does not teach that the phased array beams can be combined for a preferred reception direction but, instead, teaches selecting one of the phased array beams with a best signal strength. Thus, Meredith does not include all of the features of claims 1, 16 and 21.

The subject invention provides advantages over Lindenmeier and Meredith. As described at paragraphs [0064-0070], a coarse reception direction can be quickly determined using the multiple directional antennas. Because the plurality of antennas can be combined, a set of finer reception directions may be determined relative to the coarse reception direction, and used to select a preferred direction. In contrast, Lindenmeier directs all of the antenna elements to a single direction via a directional diagram whereas Meredith fixes the direction of each antenna (phased array). Both Lindenmeier and Meredith require searching over all of the directional diagrams/directions in order to select among one of the directional diagrams/antennas.

Because neither Tong, Lindenmeier, Meredith nor their combination, disclose or suggest all of the features of claims 1, 16 and 21, these claims are not subject to rejection under 35 U.S.C. § 103(a) in view of Tong, Lindenmeier or Meredith. Claim 14 depends from claim 1, claims 17 and 19-20 depend from claim 16. Thus, these claims are not subject to rejection

under 35 U.S.C. § 103(a) in view of Tong, Lindenmeier or Meredith for at least the same reasons as their base claims.

Applicants appreciate the indication in the Office Action that claims 3-13, 15, 18 and 23-35 are objected to as being dependent upon rejected base claims and that these claims would be allowable if amended to be in independent form including the limitations of their base claims and any intervening claims. Because, as set forth above, claims 1, 16 and 21 are not subject to rejection, claims 3-13, 15, 18 and 23-35 are also not subject to rejection.

In view of the foregoing amendments and remarks, Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1, 14, 16, 17 and 19-21 and the objection to claims 3-13, 15, 18 and 23-35.

Respectfully submitted,

  
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Kenneth N. Nigon, Reg. No. 31,549  
Attorneys for Applicants

KNN/pb

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